

**What is claimed is:**

1        1. A method for interconnecting a calling party asynchronous transfer mode system  
2        having a calling party host and a called party asynchronous transfer mode system having a  
3        called party host using an intermediate switching asynchronous transfer mode network and a  
4        border node associated with each asynchronous transfer mode system comprising:

5                 routing a call from said calling party host to said called party host over the  
6        intermediate switching asynchronous transfer mode network based on an intermediate switching  
7        ATM network addressing scheme that is recognized by said border nodes and independent of  
8        an addressing scheme of said asynchronous transfer mode systems.

1        2. A method in accordance with claim 1, wherein said routing step comprises:

2                 substituting at the border node of the calling party asynchronous transfer mode  
3        system in a called party address information element an intermediate switching asynchronous  
4        transfer mode network address of the border node of the called party asynchronous transfer  
5        mode system for the asynchronous transfer mode system address of the called party host; and

6                 routing the call over the intermediate switching asynchronous transfer mode  
7        network from the border node of the calling party asynchronous transfer mode system to the  
8        border node of the called party asynchronous transfer mode system based on the intermediate  
9        switching asynchronous transfer mode network address in the called party address information  
10      element.

1        3. A method for interconnecting a calling party asynchronous transfer mode system to  
2        a called party asynchronous transfer mode system by way of a calling party border node, an  
3        intermediate switching asynchronous transfer mode network having an intermediate  
4        asynchronous transfer mode network addressing scheme, and a called party border node, the  
5        calling party asynchronous transfer mode system having a calling party host connected to the  
6        calling party border node by at least one calling party non-border node, the called party  
7        asynchronous transfer mode system having a called party host connected to the called party  
8        border node by at least one called party non-border node, the calling and called party hosts

9 having an asynchronous transfer mode system addressing scheme independent of the  
10 intermediate switching asynchronous transfer mode network addressing scheme, comprising:

11           generating at the calling party host a SETUP message specifying the  
12 asynchronous transfer mode system address of the called party host in a called party address  
13 information element;

14           routing the call to the at least one calling party non-border node based on the  
15 called party address information element;

16           generating at the at least one calling party non-border node a SETUP message  
17 specifying in a called party subaddress information element the asynchronous transfer mode  
18 system address of the called party host from the called party address information element;

19           routing the call to the calling party border node;

20           substituting at the calling party border node in the called party address  
21 information element the intermediate switching asynchronous transfer mode network address  
22 of the called party border node for the asynchronous transfer mode system address of the called  
23 party host;

24           transmitting the call over the intermediate switching asynchronous transfer mode  
25 network to the called party border node based on the intermediate switching asynchronous  
26 transfer mode network address of the called party border node in the called party address  
27 information element;

28           generating at the called party border node a SETUP message specifying in the  
29 called party address information element the asynchronous transfer mode system address of the  
30 called party host from the called party subaddress information element;

31           routing to the at least one called party non-border node the call based on the  
32 asynchronous transfer mode system address of the called party host in the called party address  
33 information element;

34           generating at the at least one called party non-border node a SETUP message  
35 specifying in the called party address information element the asynchronous transfer mode  
36 system address of the called party host, without identifying the called party subaddress  
37 information element; and

38 routing the call to the called party host based on the asynchronous transfer mode  
39 system address of the called party host in the called party address information element.

1                  4. A method in accordance with claim 3, wherein the called party subaddress is  
2 encrypted.

1               5. A method in accordance with claim 3, wherein said step of generating at the calling  
2 party host the SETUP message further comprises identifying the asynchronous transfer mode  
3 system address of the called party host using one of provisioning, local area network  
4 emulation, multi-protocol over asynchronous transfer mode, and proprietary techniques.

5           6. A method for interconnecting a calling party asynchronous transfer mode system  
6 to a called party asynchronous transfer mode system by way of a calling party border node,  
7 an intermediate switching asynchronous transfer mode network having an intermediate  
8 asynchronous transfer mode network addressing scheme, and a called party border node, the  
9 calling party asynchronous transfer mode system having a calling party host directly connected  
10 to the calling party border node, the called party asynchronous transfer mode system having  
11 a called party host directly connected to the called party border node, the calling and called  
12 party hosts having an asynchronous transfer mode system addressing scheme independent of  
13 the intermediate switching asynchronous transfer mode network addressing scheme,  
14 comprising:

generating at the calling party host a SETUP message specifying the asynchronous transfer mode system address of the called party host in a called party address information element;

generating at the calling party border node a SETUP message specifying in a called party subaddress information element the asynchronous transfer mode system address of the called party host in the called party address information element;

21 substituting at the calling party border node in the called party address  
22 information element the intermediate switching asynchronous transfer mode network address

23 of the called party border node for the asynchronous transfer mode system address of the called  
24 party host;

25 transmitting the call over the intermediate switching asynchronous transfer mode  
26 network to the called party border node based on the intermediate switching asynchronous  
27 transfer mode network address of the called party border node in the called party address  
28 information element;

29 generating at the called party border node a SETUP message specifying in the  
30 called party address information element the asynchronous transfer mode system address of the  
31 called party host from the called party subaddress information element;

32 routing the call to the called party border node based on the asynchronous  
33 transfer mode system address of the called party host in the called party address information  
34 element;

35 generating at the called party border node a SETUP message specifying in the  
36 called party address information element the asynchronous transfer mode system address of the  
37 called party host, without identifying the called party subaddress information element; and

38 routing the call to the called party host based on the asynchronous transfer mode  
39 system address of the called party host in the called party address information element.

1       7. A method in accordance with claim 6, wherein the called party subaddress is  
2 encrypted.

1       8. A method in accordance with claim 6, wherein said step of generating at the calling  
2 party host the SETUP message further comprises identifying the asynchronous transfer mode  
3 system address of the called party host using one of provisioning, local area network  
4 emulation, multi-protocol over asynchronous transfer mode, and proprietary techniques.

1       9. A system for interconnecting asynchronous transfer mode systems comprising:  
2           an intermediate switching asynchronous transfer mode network having an  
3 asynchronous transfer mode addressing scheme;

4                   a calling party border node connected to said intermediate switching  
5 asynchronous transfer mode network;

6                   a called party border node connected to said intermediate switching  
7 asynchronous transfer mode network;

8                   a calling party asynchronous transfer mode system connected to said calling  
9 party border node; and

10                  a called party asynchronous transfer mode system connected to said called party  
11 border node;

12                  said asynchronous transfer mode systems having an addressing scheme  
13 independent from the addressing scheme of said intermediate switching asynchronous transfer  
14 mode network, and said border nodes interfacing between the addressing scheme of said  
15 asynchronous transfer mode systems and the intermediate switching asynchronous transfer  
16 mode network addressing scheme.

1                 10. A system in accordance with claim 9, wherein said border nodes are asynchronous  
2 transfer mode switches.

1                 11. A system in accordance with claim 9, wherein said calling party asynchronous  
2 transfer mode system comprises a calling party host directly connect to said calling party  
3 border node.

1                 12. A system in accordance with claim 9, wherein said calling party asynchronous  
2 transfer mode system comprises:

3                   a calling party host; and

4                   at least one calling party non-border node connected between said calling party  
5 host and said calling party border node.

1                 13. A system in accordance with claim 9, wherein said called party asynchronous  
2 transfer mode system comprises a called party host directly connected to said called party  
3 border node.

1           14. A system in accordance with claim 9, wherein said called party asynchronous  
2 transfer mode system comprises:

3                 a called party host; and  
4                 at least one called party non-border node connected between said called party  
5 host and said called party border node.

1           15. An asynchronous transfer mode switching method comprising:

2                 substituting at a calling party border node an intermediate switching  
3 asynchronous transfer mode network address of a called party border node for an asynchronous  
4 transfer mode system address of a called party host.

1           16. An asynchronous transfer mode switching method comprising:

2                 substituting at a called party border node an asynchronous transfer mode system  
3 address of the called party host for an intermediate switching asynchronous transfer mode  
4 network address of the called party border node.